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**Analysis and Improvement of Knowledge Management Processes
in an IT Strategy Support Department**

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Master's Dissertation

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Abstract

Knowledge Management nowadays is undervalued and neglected by companies. However, knowledge has proven to be a valuable asset for organizational success. The integration of new joiners in a company is an essential step for the execution of business activities. However, in most cases, there is a clear lack of a structured integration and knowledge transfer isn't as efficient as it should be. This study assesses two kinds of Knowledge Management processes – the Integration of a New Joiner and the Development of a New Project – with the aim of demonstrating how an effective Knowledge Management can improve corporate workflow. The first step was the analysis of these organizational processes and their underlying Knowledge Management Processes. The models used for this project were Nonaka & Takeuchi's Knowledge Conversion and Five-Phase Model for Organizational Knowledge Creation. The result of this dissertation was an improvement proposal for the Knowledge Management Processes and the mirrored improvement of the organizational processes.

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1 Introduction

1.1 The RTL Group - Company Presentation

The RTL Group is the leading European entertainment network. Its historical roots date back to the year of 1924, when Radio Luxembourg was launched. RTL Group as we know it was founded in the year of 2000 as a result of the merger of Luxembourg-based CLT-UFA and Pearson TV, a British content production company. CLT-UFA itself was a merger of the TV, radio and TV production businesses of the *Compagnie Luxembourgeoise de Télédiffusion* – CLT (Audiofina) and UFA (Bertelsmann). The latter has been the majority shareholder of RTL Group since the year of 2001.

RTL Group's strategic focus relies on three main areas. Investing in the broadcasting industry allows the company to strengthen families of channels and attract high audience shares as a broadcaster of “can't afford to miss” content. Their aim is to grow as a non-advertising business and expand into high-growth markets. RTL is the largest European broadcaster and has interests in 29 radio stations in 8 European countries.

To create market-leading content, FremantleMedia – RTL Group's production branch – wants to maintain its leading position as a producer of quality programming by investing in the development of new formats and brands, intends to diversify its portfolio, aims to maximize its global network and targets a deepened digital exploitation by investing in the strengthening of online production and distribution.

In the digital world, online video is the core of RTL's strategy. The Group aims to excel in all of its segments by growing online advertising and non-advertising businesses, betting on non-linear services by making its first-rate linear TV content available in the non-linear world and integrating a multi-channel network business.

CLT-UFA SA is a subsidiary of RTL Group and is home to the Group Transactions & Reporting Systems (GTRS) department. Created in 2005, this unit takes responsibility for the corporate Referenced Applications – such as SAP, BOFC, Cashpooler and City Financials –, where internal expertise and administration is withheld and maintained. This department plays an exclusive role in supporting the overall RTL Group IT strategy in the area of all referenced applications.

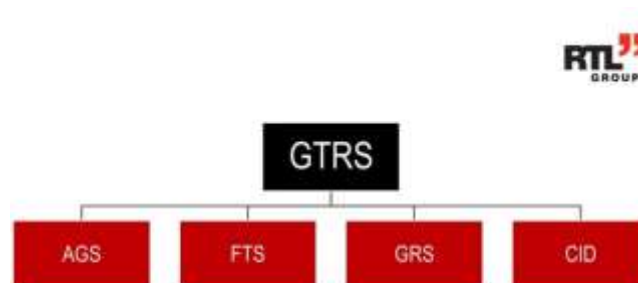


Figure 1 - GTRS Management Services

The Application Global Support (AGS) team is the 1st Level Support of all GTRS referenced applications and is accountable for user access management and ticket management. Tickets are generated by the client's call for support and primarily handled by AGS. If the problem doesn't concern their area of expertise, the ticket is transferred to the adequate team.

The Group Reporting Systems (GRS) team is in charge of the maintenance and improvement of the SAP BOFC¹ reporting application. Its role as 2nd Level Support includes the responsibility for tickets forwarded by AGS by checking and assessing the situation, communicating with the client and posterior quality review of the ticket before closing it.

The Financial Transactions Systems (FTS) team is the 2nd Level Support and holds responsibility for SAP client, strategic and small/improvement projects and customer follow-up. Furthermore, FTS supports the accounting and consolidation process and has ownership and management rights of SAP ERP applications, namely SAP ECC6² and SAP B/W³. FTS is divided by processes, namely treasury, consolidation, controlling and reporting and IT applications.

The Corporate IT Development (CID) team supports the other departments in the custom developments based on the referenced applications. They also account for the maintenance of the developed applications and support its users.

1.2 Project Description

There is an emerging problem with the lack of an effective Knowledge Management (KM) schema in companies – as the process which assesses the capture, development, sharing and effective use of knowledge. This also includes enduring its applicability and guaranteeing its availability. Both the company and their clients play a role in KM, but the consequences aren't unilateral, meaning that the efficiency of a company's KM process (or the lack of it) may have repercussions on their business, and vice-versa.

This project has been developed within the GTRS department, more specifically within the FTS team. In context, it focuses essentially on the Business End Users – further mentioned as “business” and “business users” –, who are all entities who purchase the services provided by GTRS. This IT Strategy department is a service provider essentially in the SAP forefront.

For a smooth bilateral workflow, the service providers should discard time-consuming tasks and dedicate themselves to activities which bring value to the company. For instance, if there is less need for support, the service providers will increase their productivity when developing the solutions for what was requested. Building up on this, the business users should be as independent and self-capable as possible, avoiding unnecessary calls for support, and therefore should be wholly equipped and have full acknowledgement of their responsibilities. It's also important that the right material has been provided to them when necessary and that they are aware of how to function with the tools available for them.

The aim of this project is to analyze two processes in the perspective of knowledge management. On one hand, the process of “Integration of a New Joiner” is analyzed in light of knowledge transfer. On the other hand, the process of “Development of a New Project” is

¹ Business Object Financial Consolidation

² ERP Central Component

³ Business Warehouse

analyzed in light of knowledge creation. The choice of these two processes is justified by the fact that the GTRS department sees these two moments as key points in the knowledge management spiral in terms of potentiating business users with knowledge and reducing their need for support in the long-term.

Firstly, both processes and their underlying knowledge management processes are represented AS-IS, that is, the organizational knowledge creation process and knowledge transfer process are represented in context, as they are currently carried out.

The second step of the project – the representation of both processes TO-BE – will consist of the redefinition of these processes according to the best practices and the feedback from both the business and the support providers, having in mind the ultimate goal of making business end users as independent from first level support – or second level support, in case FTS is the support provider – as possible, through effective knowledge management processes. If properly framed in the business' workflow and if efficiently managed, knowledge can turn into a time-saving asset.

1.3 Project Methodology

- I. **Bibliographic Research:** the first step of the project was gathering material on the best practices regarding management processes for knowledge creation and knowledge management, as well as material on technology associated to knowledge work. Given the nature of this study, it was also relevant to focus on the distinction between data, information and knowledge and between tacit and explicit knowledge. Furthermore, the bibliographic research also covered the central theme of organizational knowledge creation as a whole.
- II. **Interviews to Company Specialists and Business Users:** in view of the goals set for this project, two sets of interviews were conducted. For project-related purposes, FTS specialists were interviewed specifically in light of the process of Development of a New Project, considering that they have no direct intervention in the Integration of a New Joiner. The questions posed aim not only to address the process specialists' interaction with business users – within the core of the new project's launch – but also to assess the extent of support provision and knowledge creation for a better and broader understanding of the global procedures and common points.

Considering the project's aim, the business users were interviewed accordingly. The set of questions placed to them focus both on processes as well as on the comprehension of the knowledge flow and availability in general. It is relevant to understand if there is documented knowledge accessible in both of the processes' environments and know how it is handled and if it is shared and updated.
- III. **Analysis of Business Processes and underlying Knowledge Creation Processes:** the third stage of the project was the representation and analysis of the process of Integration of a New Joiner and of the Launch of a New Project and, in parallel, their corresponding Knowledge Creation Processes. This approach identified the actors and describes the activities that induce organizational knowledge creation.
- IV. **Assessment of Critical Points and Redesign of Business Processes:** the final step of the project was the assessment of previously identified critical points with the ultimate goal of redesigning the knowledge creation processes which, consequently, influence

the business process themselves. This section is a result of the previous analysis but also considers the observations made by the interviewees, also attending a few suggestions made by them.

1.4 Covered Topics and Report Organization

The dissertation is divided into five chapters, as follows:

1. **Introduction:** introduces the theme and framework of the project, as well as the company and environment it was developed in. Lays the research questions that motivated the study, explains the used methodology and details the report's topics and their organization.
2. **State of the Art:** develops the bibliographic and scientific research stated in the Project Methodology.
3. **Knowledge Management Framework AS-IS:** represents the processes of Integration of a New Joiner and Launch of a New Project from the Business' point of view, as well as their underlying Knowledge Creation Processes.
4. **Knowledge Management Framework TO-BE:** includes the analysis of the KM Framework AS-IS and describes the improvement proposal in the form of a KM Framework TO-BE, accordingly.
5. **Conclusions and Evolution Perspectives:** draws conclusions on the advantages that the improvement plan can bring to drive closer to both the Business' and the Company's goals. Includes further considerations that could be the guiding thread for future improvement proposals.

2 Literature Review

This chapter reviews the state of the art of organizational knowledge creation and knowledge management practices. Relevant concepts for this study, such as (the difference between) tacit and explicit knowledge, knowledge conversion and knowledge model have been developed further for a better contextualization and understanding of the developed project.

2.1 Data, Information and Knowledge

Data versus Information versus Knowledge

It is important to distinguish between data, information and knowledge as three terms which are mistakenly believed to be interchangeable. Davenport & Prusak (2000) defend that organizational success and failure can depend on knowing which of them you need, which of them you own and what is possible and not possible to do with each of them.

According to the authors, data is described as a set of objective facts about events. Data management is usually done through a technological system and is effective for record keeping. The fact that data per se has no inborn meaning supports the inutility of excessive data gathering, making it difficult to make sense of the data which is actually meaningful. The importance of data comes with the fact that it is essential raw material for the creation of information (Davenport & Prusak, 2000).

When data is categorized, summarized and examined, it is called information. It's considered a *message* meant to have an effect on the receiver's judgment and behavior (Davenport & Prusak, 2000) and can travel through an organization by either hard or soft networks, which are less formal and observable. Once data is granted with meaning, it becomes information. Davenport & Prusak (2000) consider several methods for this process:

- Contextualization
- Categorization
- Calculation
- Correction
- Condensation (a more concise form of summarization)

Nonaka & Takeuchi (1995) consider two perspectives of information: "syntactic" and "semantic" information. The latter – the meaning of information – is the most relevant for knowledge creation. The authors define information as a flow of messages and defend that this flow, when combined with its holder's beliefs and commitment, creates knowledge.

Knowledge is about action and meaning in that it's context-specific and relational, depending on the situation and created by social interaction among people (Nonaka & Takeuchi, 1995). The fact that knowledge is a mix of experiences, values, information from the surroundings and expert insight, leads it to ingrain in documents and repositories as well as corporate routines, processes and practices (Davenport & Prusak, 2000). Among others, the authors define conversation as a transformation of information into knowledge, justifying that knowledge can be obtained from individuals or groups of knowers.

Quinn (1992) further infers that knowledge-based intangibles such as technological know-how, understanding of customers and personal creativity can be responsible for the value of products and services.

2.2 Knowledge Conversion

Tacit Knowledge and Explicit Knowledge

Arguably, tacit and explicit knowledge have been described as distinct, although related concepts. Nonaka & Takeuchi (1995) have unraveled the main difference in approaches, which they defend to exist between Japanese and Western practices. Contrarily to Westerners, Japanese companies firstly consider knowledge as neither visible nor expressible. According to the authors, this is called “tacit” knowledge – something that is hard to formalize, such as insights and hunches that are embedded in an individual’s personal actions and experiences and, therefore, hard to transmit to others.

Tacit knowledge can be segmented into two dimensions: the technical dimension – including “know-how” underlying skills and abilities – and the cognitive dimension – mental models, perceptions and beliefs which are implicit in the way we perceive our surroundings (Nonaka & Takeuchi, 1995). The nature of tacit knowledge makes it difficult to process or diffuse it in any coherent or methodical manner.

Explicit knowledge, on the other hand, has a strong technical side to it, for it can easily be “processed” by a computer, transmitted through electronic channels and stored in databases (Nonaka & Takeuchi, 1995). Explicit knowledge can be expressed in words and numbers and shared in the form of data, formulae and manuals, among others (Nonaka & Konno, 1998).

Nonaka & Takeuchi (1995) consider the two kinds of knowledge as complementary building blocks in a connection which is at the base of organizational knowledge creation.

Knowledge Conversion

Nonaka & Konno (1998) defend the SECI model as an outline for knowledge conversion processes of self-transcendence. Nonaka & Takeuchi (1995) connect to the SECI model outline by defending a dynamic model of knowledge creation grounded on the social interaction between the two types of knowledge, which they call “knowledge conversion” and that can be performed according to four modes:

- Socialization (from tacit knowledge to tacit knowledge)

This mode is the process of sharing experiences and creating tacit knowledge within an “interaction field” in the form of shared mental models and technical skills – sympathized knowledge. These can be acquired without resorting to language, through observation, imitation and practice (Nonaka & Takeuchi, 1995).

- Externalization (from tacit knowledge to explicit knowledge);

Nonaka & Takeuchi (1995) describe it as the process of concept creation by combining induction and deduction, which is triggered by dialogue or collective reflection. However, articulating tacit knowledge into the form of explicit concepts is easier to achieve through a nonanalytic method, driven by metaphors, analogies, hypotheses or models.

- Combination (from explicit knowledge to explicit knowledge);

This mode is the process of systemizing concepts into a knowledge system, triggered by the combination and exchange of newly created and existing knowledge through documents, meetings, over the telephone or by computer-based communication networks (Nonaka & Takeuchi, 1995). The authors consider that by sorting, adding, combining and categorizing existing information, new knowledge will be created.

- Internalization (from explicit knowledge to tacit knowledge).

This is the process of internalizing the experiences acquired through the previous three modes into individuals' tacit knowledge in the form of shared mental models or technical know-how (Nonaka & Takeuchi, 1995). The authors claim that documentation helps to internalize experiences and eases the transfer of explicit knowledge from one person to another. This process is triggered by "learning by doing" and is the end of one knowledge conversion cycle.

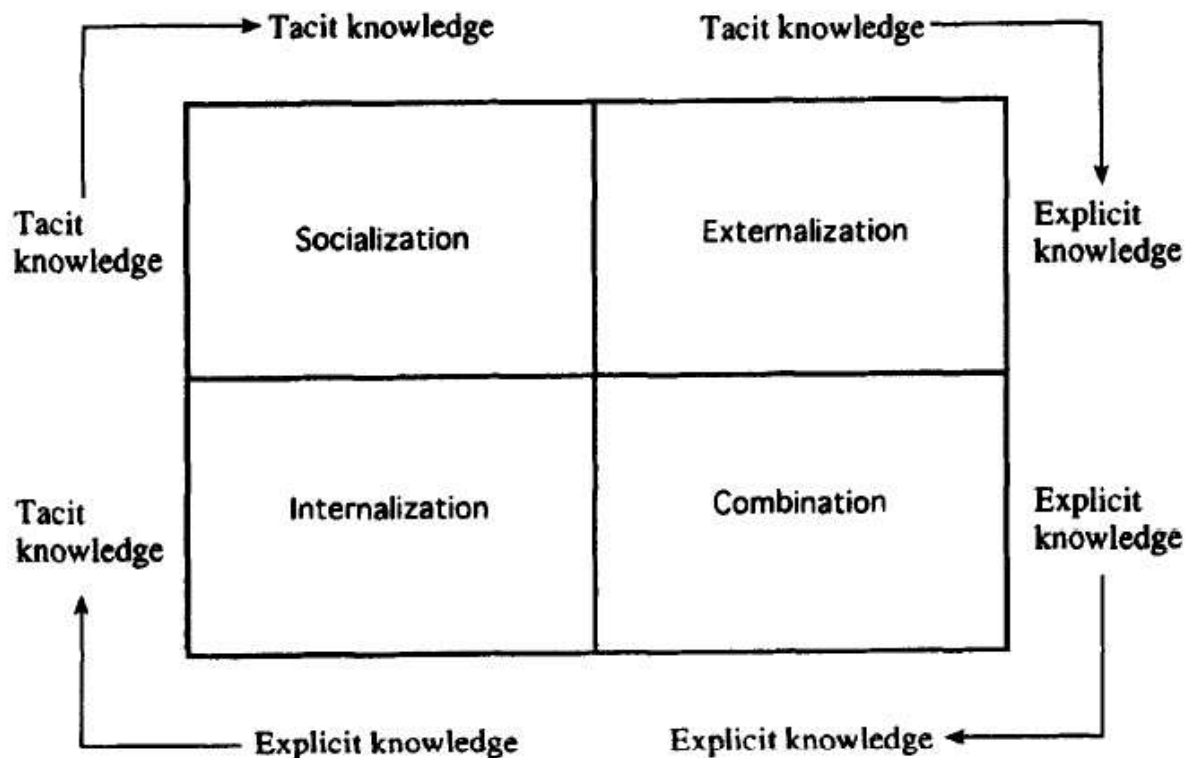


Figure 2 - The four modes of knowledge conversion

2.3 Organizational Knowledge Creation

Five-Phase Model of the Organizational Knowledge-Creation Process

The Five-Phase Model suggested by Nonaka & Takeuchi (1995) is based on the four modes of knowledge conversion and the enabling conditions that endorse organizational knowledge creation. These conditions include the organizational intention/aspiration to its goals, the organizational members' autonomy, the fluctuation and creative chaos which motivate the interaction between the organization and its surroundings, the redundancy, or existence of information that overlaps the organizational immediate need at a certain point in time, and

requisite variety, as the capacity of an organization to match the variety and complexity of its surrounding environment to deal with any challenges that arise.

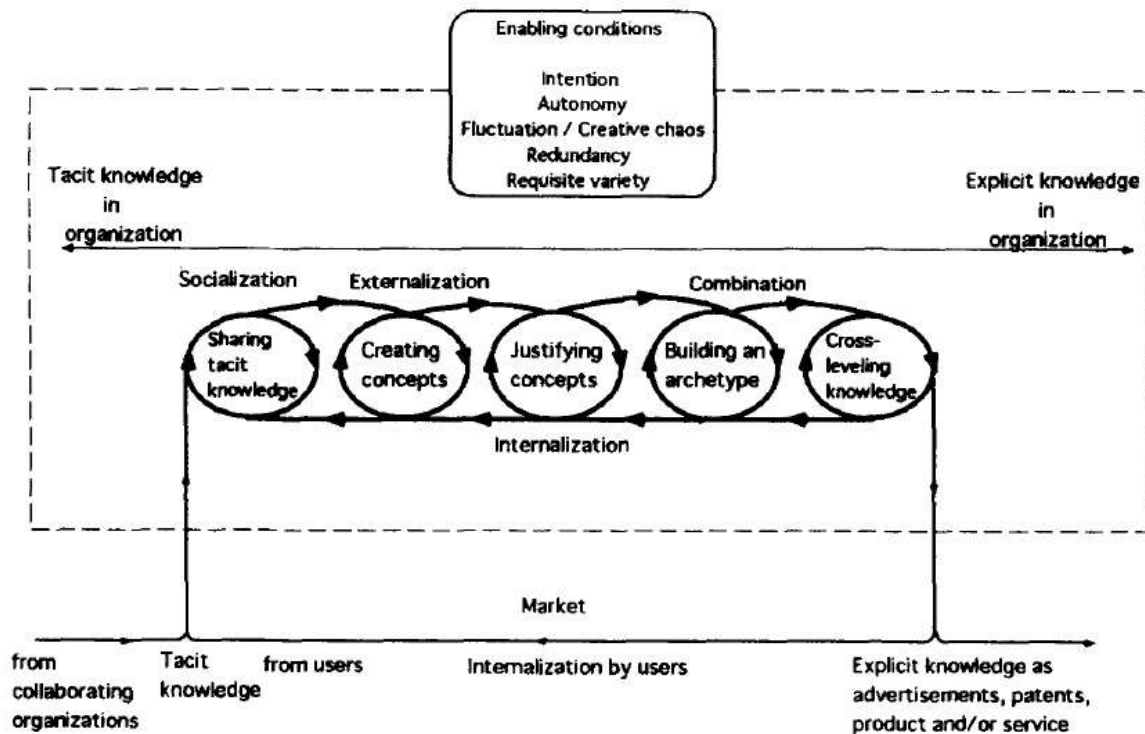


Figure 3 - The Five-Phase Model of the Organizational Knowledge-Creation Process

As the name suggests, this process has five stages. The first one is sharing of tacit knowledge held by individuals, as the basis for organizational knowledge creation. Since tacit knowledge is acquired primarily through experience and not easily expressible in words (Nonaka & Takeuchi, 1995), and to overcome differences in culture, backgrounds and motivations, there is a need for a common ground for mutual interaction.

Nonaka & Takeuchi (1995) suggest that the typical field of interaction is a self-organizing team in which members from distinct background work together to achieve a shared goal. The authors consider that the requisite variety of the team members, who experience redundancy of information and share their overview of organizational intention fit into a (self-organizing) team that will facilitate organizational knowledge creation. The management is responsible for promoting creative chaos by challenging the team and giving them autonomy to express themselves.

Once there is a shared mental model, concept creation takes place – the second phase of the process, which corresponds to externalization. All along, the team's autonomy and their requisite variety are aligned with the organizational intention, as a guiding thread for concept creation. Fluctuation and chaos defy individuals to think out of the box and redundancy helps them both to understand and to express themselves in figurative language and consolidate their shared mental model.

The third phase of this process is the justification of created concepts. This is the way the organization has of screening concepts, information and knowledge further than the team already does all along the process, according to organizational intentions. Information redundancy supports both qualitative and quantitative justification criteria.

The next stage is to convert the justified concepts into something concrete by combining existing explicit knowledge with newly created explicit knowledge – building an archetype. That is, joining the expertise of different people to develop specifications that will meet to create a product concept in full-scale form. Justified concepts are turned into an archetype, starting with a blueprint and resulting in a new form of an organizational concept.

The organizational knowledge creation process isn't static, meaning that the created archetype will move on to another cycle on a whole new level of knowledge creation. The cross-leveling of knowledge – last in line in the Five-Phase Model – is the name for the knowledge creation interaction and spiral. The fact that cross-leveling can happen both intra and inter-organizationally requires autonomy for each organizational unit to take it and apply it elsewhere.

2.4 Technology associated to Knowledge Work

Davenport (2011) praises technology as a vital enabler of communication, collaboration and simplified access to large amounts of information. However, he states that the excessive empowerment of technology has masked knowledge work. The author defends that companies should develop a strategy that matches the types of knowledge a worker needs to the kind of technology this requires.

There are two distinct paths towards improving access to knowledge work information. The free-access approach presumes that employees will be self-capable of assessing their own work processes and needs, whilst the structured model relates to the provision of information and knowledge within a clear context of tasks and deliverables.

The first approach benefits the employees by conceding them more autonomy in their work and information applicability, allowing more openness in the response to uncertainty and ambiguity in the cases where it is hard to predict contingencies in advance. Furthermore, the IT solutions that support the free-access model are of simple implementation and, therefore, adaptation issues are minor.

However, the fact that workers have dexterity in handling technology tools, it doesn't necessarily make them skilled when it comes to searching, applying or sharing knowledge, which is a setback for this kind of knowledge work approach.

Structures-provision technology is the engine for the second approach, and serves several purposes. Workflow technology, for instance, defines how knowledge workers get information and inform them about their tasks. This method implies greater productivity in terms of task completion and task assignment management.

Still, this kind of model also has some shortcomings. Excessive structure limits the workers' autonomy when executing their tasks and social interaction is decreased. The strict system and process design in this environment only allows little flexibility to adapt to changing processes or business environments.

Some organizations use hybrid solutions, making partial restrictions on the types of information that autonomous workers can use and, in other cases, combine the free and the structured approaches, allowing employees to be both. The advantage here comes with an efficient identification of the knowledge workers and the range of tasks they execute, considering that different knowledge workers have different information requirements which can misfit in the predefined technological structure.

To that effect, Davenport (2011) suggests a matrix which describes four clusters of knowledge work based on the complexity of work performed and the level of interdependence between workers who carry out a specific task. This is a useful tool for determining which of the three approaches better fits the business units and the organizational workflow, according to the different knowledge workers' needs when it comes to technological support.

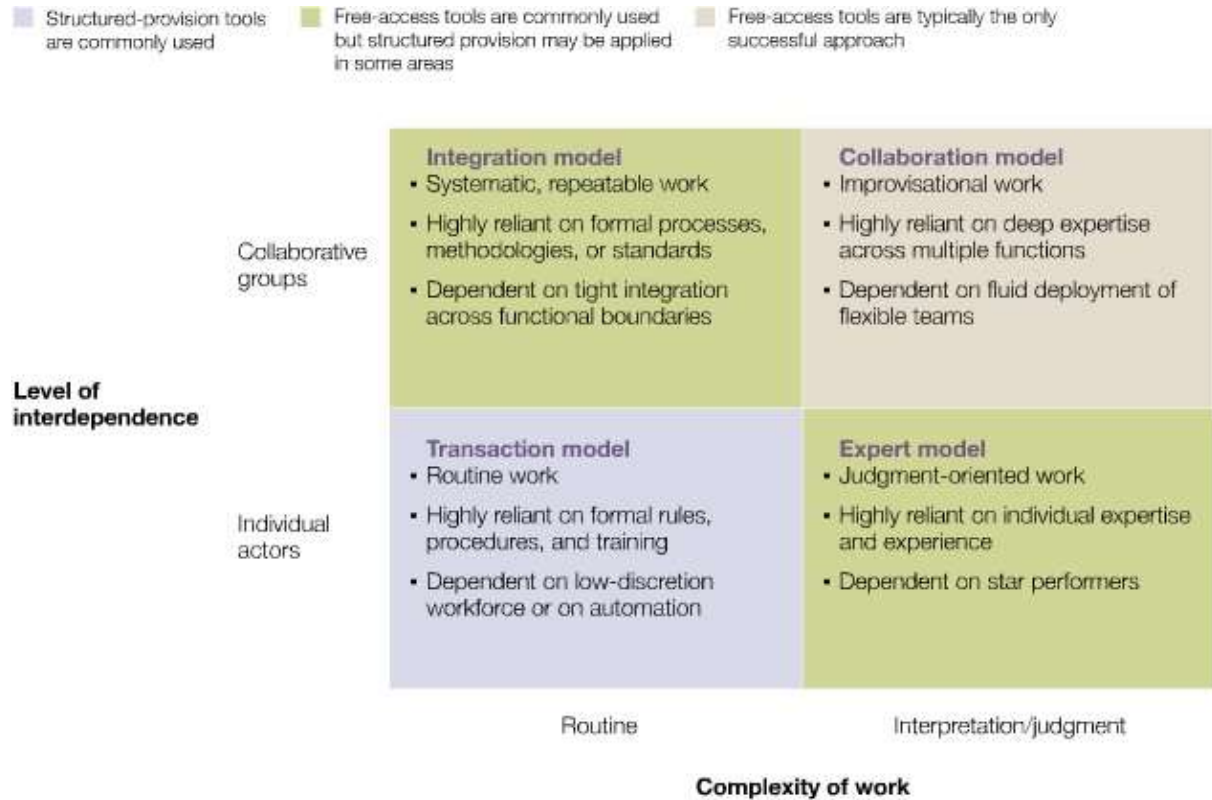


Figure 4 - Matrix of Knowledge Work Models

2.5 Best Practices

The Middle-up-down Management Process for Knowledge Creation

The knowledge creation process is influenced by the management process models adopted by the organizations. There are two dominant ones, namely the top-down and the bottom-up models. Neither of them is truly effective when it comes to knowledge conversion. Nonaka & Takeuchi (1995) describe the first model as best suited to deal with explicit knowledge and, therefore, providing only partial knowledge conversion through combination and internalization.

Top management is the only entity able and allowed to create knowledge which exists solely to be processed or implemented. Fluctuation and chaos are neglected, making workers limited in terms of information-processing and unable to deal with a mass of information.

The concepts created by top management become the operational conditions for middle managers. Their role is diminished to information processing and they hardly are involved in knowledge creation itself. Within this model, the middle manager's role is to report back to top management regarding analyzed business problems and opportunities and manage front-line employees according to orders from above.

Bottom-up management is a mirror image of top-down management (Nonaka & Takeuchi, 1995) which grants the front-line employees the power to both create knowledge and – to a substantial level – manage it. Since employee autonomy is the key operating principle, interaction is neglected, as is with the top-down model. Once more, knowledge is only partially converted, focused on socialization and externalization.

The fact that this management model applies to a flat organizational structure results in the lack of a place for middle management. Top managers are sponsors and workers are provided with the autonomy of being independent entrepreneurs, making it clear that this kind of managerial model lacks hierarchy and division of labor.

As a solution for the limitations of the previous two models, Nonaka & Takeuchi (1995) propose a third model where the middle manager assumes a prominent position. The middle-up-down management model suggests that middle managers are the knowledge creators, positioning them at the center of vertical and horizontal information flows. They should lead task forces through a spiral knowledge conversion process involving both top managers and front line employees.

McKinsey & Company: Knowledge Management Practices

McKinsey & Company has become a leading company in successfully transforming organizational knowledge into ideas, products and solutions withholding competitive advantage.

Bartlett (2000) explains that to leverage the firm's functional expertise, McKinsey & Company has focused on assembling specialized working groups for two distinct purposes. On one hand, a working group that would develop knowledge at the core of business practice and on the other hand, a working group to articulate existing organizational knowledge within its environment.

The concept of Center of Competence was created with the purpose of having knowledge development at the core as an ongoing and intrinsic organizational process of shared responsibility. The idea of these centers is to help consultants and ensure a continuous renewal of the enterprise resources. The Centers of Competence also introduced a new figure, the practice leaders – recognized experts detached for each center.

McKinsey's 'one-firm' culture (Indu P, 2007) helped create informal networks that induced knowledge sharing within the organization. For instance, the promotion of internal knowledge communication was fostered by short summaries of relevant new ideas which the experts who created them could detail – documents called "Practice Bulletins" (Bartlett, 2000).

The need for the development of the firm's structure called for a common database of knowledge accumulated from client work and its development in practice areas. This structure development also took form in the need to guide consultants to access the most relevant information at the same time as a close monitoring of the quality of the data.

The implementation of these measures, among others, required new systems and procedures to make data more complete, accurate and timely. This way, information could become a reliable information resource rather than an archival record (Barlett, 2000).

The Practice Development Network (PPNet) was born out of a challenge made to each practice area to develop and submit documents regarding their core knowledge. This computer-

based solution then originated a Knowledge Resource Directory (KRD), consistent of the key document titles and their authors' names organized by practice area, for future reference.

Indu P (2007) describes further adopted methods applied to boost the knowledge management practices, including supplementary document classification according to more criteria and an annual event focusing on emerging issues – the practice Olympics.

The author explains that new joiners at McKinsey started off with a one-week training course entitled 'basic consulting readiness'. In case their background wasn't related to business management, they would also complete a mini-MBA course. During the five years that followed, consultants spent on average three weeks per year on training and attended seminars and workshops regularly. Associates – involved in aspects of the projects such as defining the problem, collecting information and analyzing findings –, on the other hand, received on the job training and mentoring by other team members.

Project-wise, McKinsey required all teams to appoint a member to document the proceedings, including experiences and client feedback to the assignments and information on employees involved in the project.

3 Knowledge Management Framework AS-IS

3.1 Integration of a New Joiner

For the GTRS Department as a service provider, the Accounting Department, which also belongs to CLT-UFA, is considered a business user seeing as it's as active as any other external business user in requesting paid services and support.

Having this in consideration, the project focused upon the Integration of a New Joiner within this business unit. This allowed a more accurate approach to the process, derived from the possibility to have face to face interviews with team members and the fact that FTS and the Accounting relate to one another on a daily basis.

3.1.1 Activities and Participant Roles

The trigger event for this process is the Human Resources' confirmation of the arrival of a new employee. The Accounting department's priority is to ensure a work spot, hardware and access authorizations according to the new joiner's role. After the GTRS department provides SAP access authorizations and sets up an institutional e-mail and user, the newcomer finally joins the company.

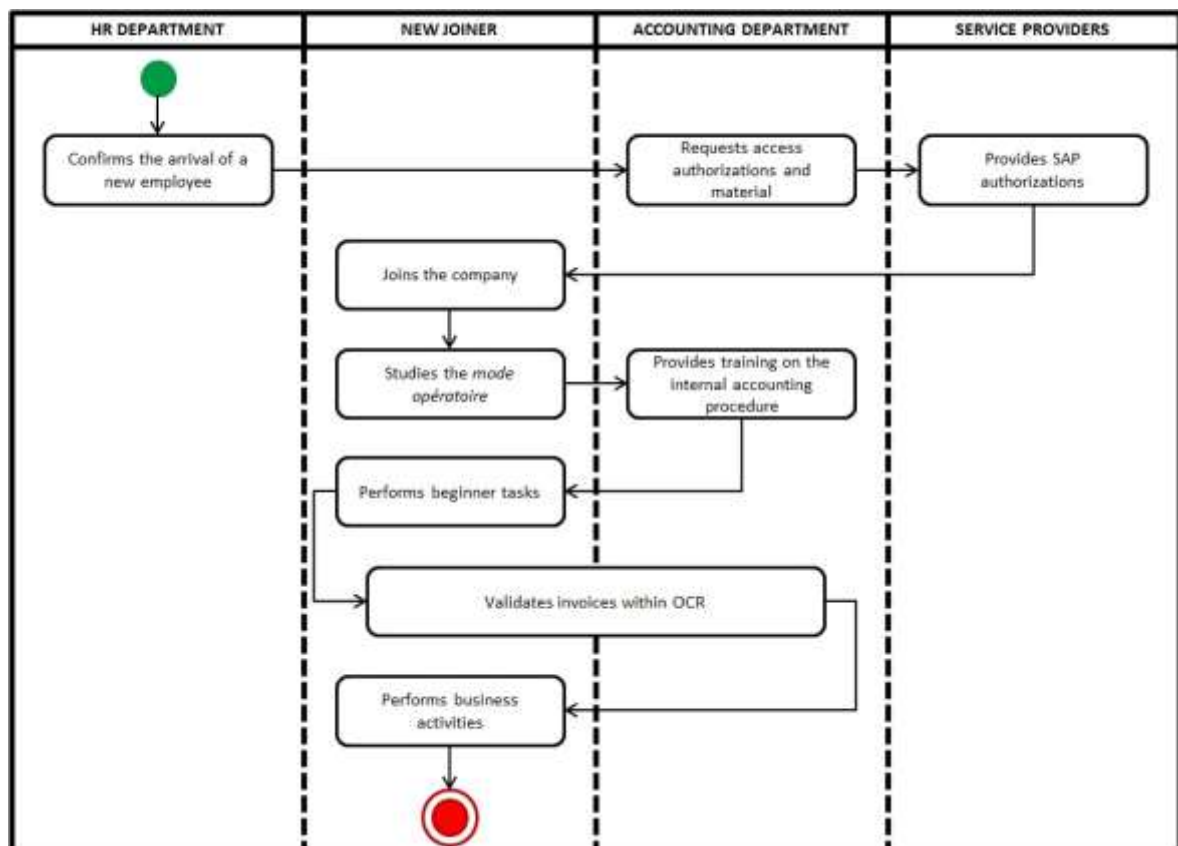


Figure 5 – Process of Integration of a New Joiner in the Accounting Department

The new joiner's training begins with the study of the *mode opératoire* – the Accounting department's collection of internal Standard User Procedures (SUP), adapted to their activities and needs. The first training-driven interaction between the new joiner and the rest of the team happens when training is given on the internal accounting procedure. Although the new

joiners are recruited according to predefined standards such as accounting notions and skills, it is essential that they get hold of internal procedures and terminology as soon as possible.

Once newcomers are acquainted with organizational accounting settings, they proceed to beginner tasks, which range from handling the e-mail inbox to observing other team members and combining what they've studied to what they see, that is, they accompany the accountants whilst they perform their tasks but have no responsibility for it.

The next step is a shared activity for two reasons. Apart from being performed by both the new joiners and other team members – where the first one learns from observation as well as from doing –, this is the point where the training becomes consolidated and when a newcomer transitions to corporate accountant. The validation of invoices within the Optical Character Recognition (OCR) consists of the comparison between the original invoice and the one processed by OCR, verifying that there is no misinformation or lack of it. If any information is missing, it is also the newcomer's responsibility to fill in relevant missing accounting information.

The closing activity for the process of integration of a new joiner is the performance of business activities according to the assigned role. Once newcomers have escalated from beginner tasks to intermediate activities and, finally, to performing business activities, they can be considered capable corporate employees and cease to hold the title of new joiners.

3.1.2 Knowledge Transfer Process

This section focuses upon the underlying knowledge transfer process for the Integration of a New Joiner. The figure below represents the knowledge transfer activities according to the four modes of knowledge conversion, having in mind the kind of knowledge that each one of them produces. The activity shaded in grey is performed by the Accounting team, whilst the others are performed by the new joiner. However, there is one activity in which both actors are involved in two forms of knowledge conversion. This activity is shaded in a lighter grey.

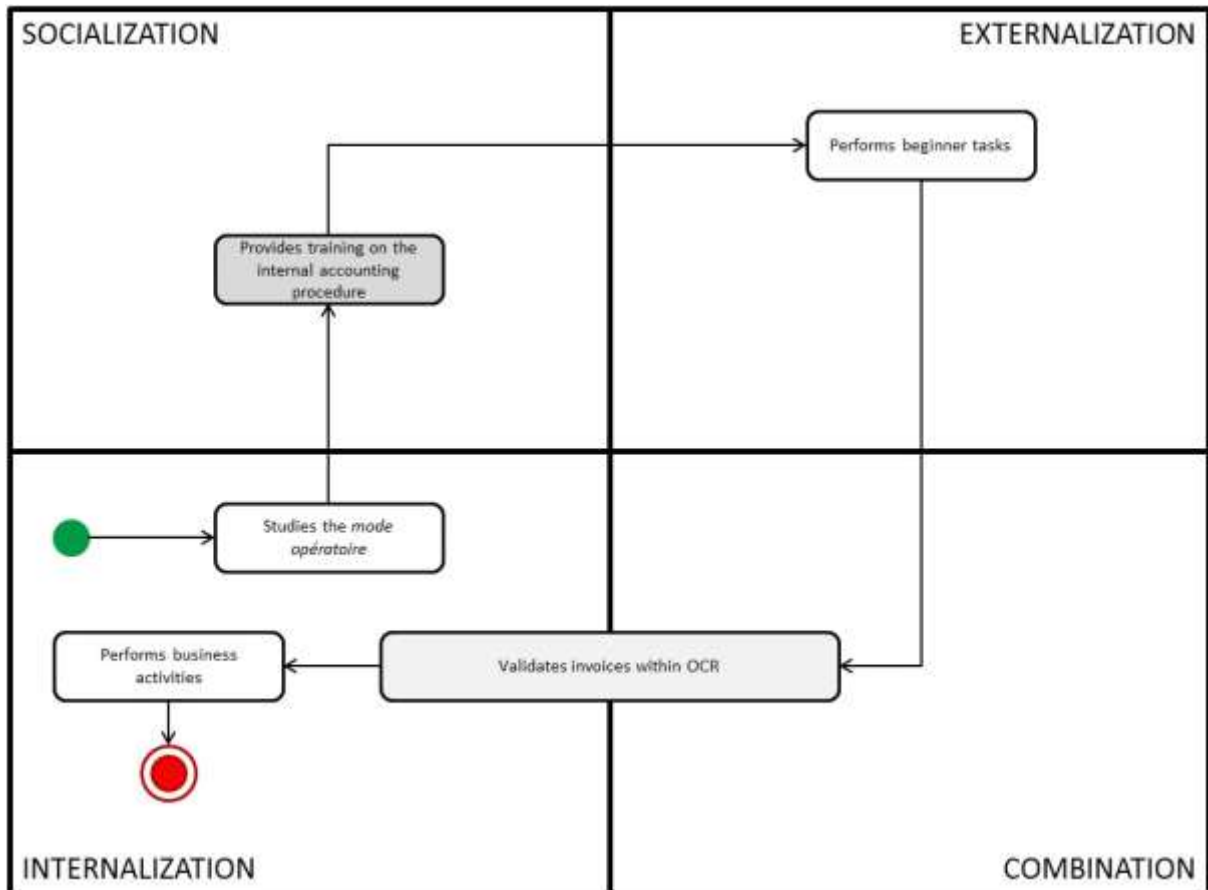


Figure 6 – Process of Integration of a New Joiner: Knowledge Transfer AS-IS

The first step of a new joiner’s integration is a form of internalization. When he studies the *mode opératoire*, he’s articulating explicit concepts into tacit knowledge. That is, he interprets written information and translates it into his own mental models, which can take the form of concepts.

The second step – the only form of socialization in this process – is when the Accounting team provides training on the internal accounting procedure. Although there are documents supporting their training sessions, it is from the verbal sharing experience that new joiners acquire tacit knowledge.

The next part of the integration process is the performance of beginner tasks, which translates into applying the received training to the execution of a task by creating mental models of how it’s done and making an analogy to the procedure.

The next activity – the validation of invoices within OCR – is performed conjointly by the Accounting team and the new joiner. However, it is not a form of socialization, but builds on the newcomer’s autonomy when performing activities. On one side, it’s an internalization process seeing as the newcomer “learns by doing”, and on the other it’s a form of combination, since the new joiner continues to resort to explicit knowledge, categorizing and sorting it to translate into an action of his own.

The knowledge creation process for the Integration of a New Joiner reaches a terminus when the latter performs a business activity on his own. That is, he is fully capable of experiencing the rest of the team’s experiences through the process of internalization and can move on from being a newcomer to becoming part of the team itself.

3.2 Development of a New Project

This process applies to all internal projects at RTL Group, considering that the ultimate project stakeholder belongs to a controlled entity of the Group. Developing a new project is a standardized process, unlike the integration of a new resource, and its lifecycle is composed of 5 stages.

3.2.1 Activities and Participant Roles

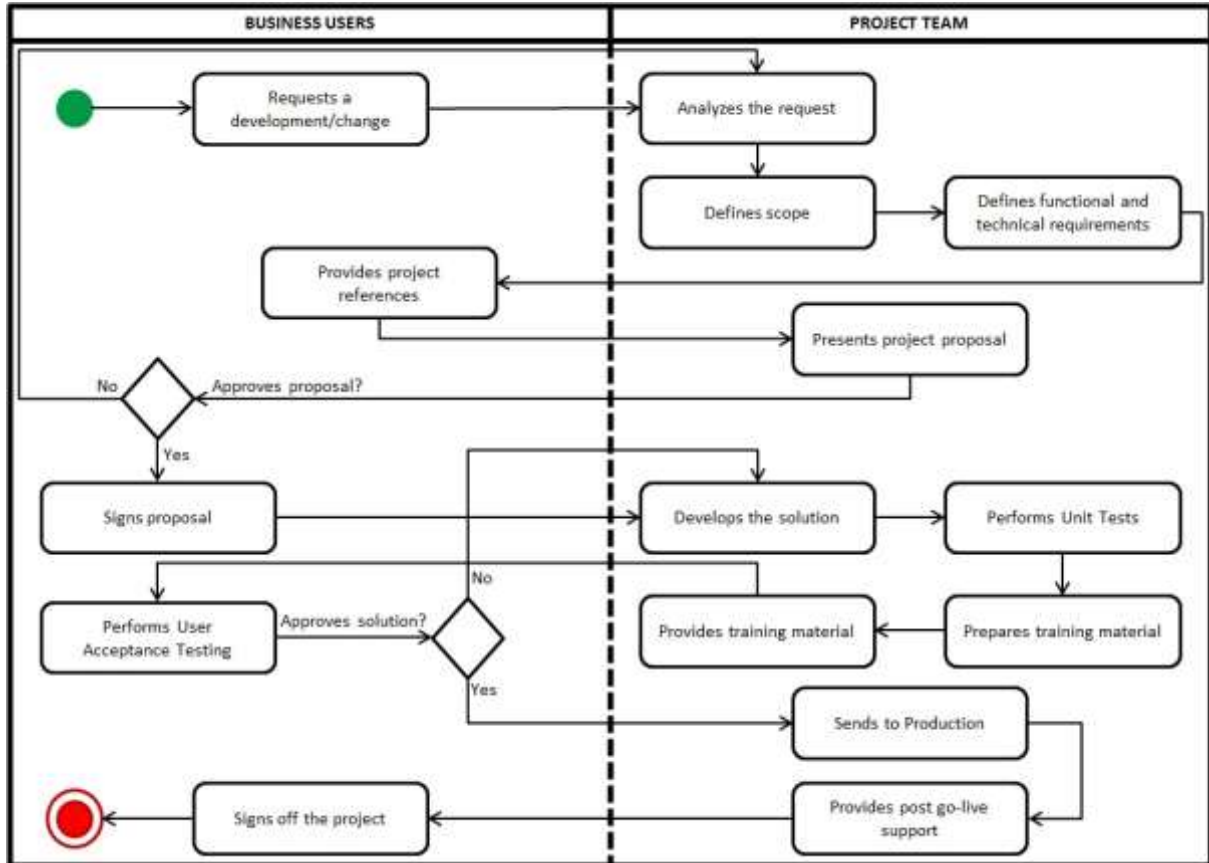


Figure 7 - Process of Development of a New Project

The trigger event for this process is the business user's request for a development or change/improvement. In most cases, a request made to FTS is of a technical nature and submitted into the system under the form of a ticket, as an improvement request, which is categorized according to the area it applies to. Tickets exist for tracking purposes, allowing the transport of the developed solution from the testing environment into the production platform.

Typically, requests refer to developments or changes to the SAP platform, although users can also make requests regarding other technological solutions in use. A development refers to a solution built from scratch and a change/improvement refers to amendments made to an existing solution.

The first phase, called Pre-Study, is performed between both parts. The project team analyzes the request in order to define its scope, settle its functional and technical requirements and suggest the deliverables. The business users provide project references so that the outcome – a formalized project proposal – aligns the input from both sides. Once the proposal is presented,

the business users can or cannot accept it. Since this is a conjoint product, it is more often signed than denied. However, due to language and cultural barriers, the project team may have to reanalyze the request, causing the process to start over.

The Project Kick-Off – the second phase – is the period of time between the signing of the proposal and the development of the solution. In practical terms, it's the consolidation and review of what has been discussed and settled, allowing a smooth inception of the Execution phase.

The Execution phase clusters all activities from the development of the solution up to the provision of post go-live support. The development of the solution includes the formalization of a blueprint – the project deliverables design. After the blueprint is signed off by the key users, the design blueprint has to be converted into the solution itself, within the system, addressing the predefined requirements.

Unit tests are performed at the pace of the solution's conception, meaning that for each unit of the solution developed, it is also tested by the developers to check if it runs smoothly or if further adjustments should be made. As part of project deliverables, the training/reference material should cover end-user activities and references to functional use, processes and procedures for post go-live orientation.

The User Acceptance Testing (UAT) consists of validating the solution in terms of compliance with the intended effect and regarding its impact on existing solutions. The testing scripts used as a foundation for UAT are part of the training material provided by the project team.

If the solution is approved, it is sent to production. This is the moment of the Go-Live, the fourth stage of the project development. It includes the provision of post go-live support, as the way the project team has of following-up the solution they developed and accompanying the business users in their first – and most critical – steps of usage.

The consolidation of project activities is done after the budgeted post go-live support and before the project sign-off. This includes the project cost management – for instance, tracing the project team's efforts – and keeping a regular control of what was agreed on compared to the project's reality.

Furthermore, any updates to the initial proposal must be formally addressed and submitted for acceptance, for a smooth closing of the project. Risk management should be carried out throughout the project, taking responsibility for the identification, assessment, prioritization and remediation of project risks relating to resource availability, knowledge and productivity, design issues and budget overruns, among others.

The final stage in the process of Development of a New Project is the Project Closing. This includes the preparation of a Service Level Agreement (SLA) which is submitted to the client for signature. The project is officially formalized by a sign-off letter.

3.2.2 Knowledge Creation Process

This section focuses upon the underlying knowledge creation process for the Development of a New Project. The figure below represents the knowledge creating activities according to the four modes of knowledge conversion, having in mind the kind of knowledge each one of them produces.

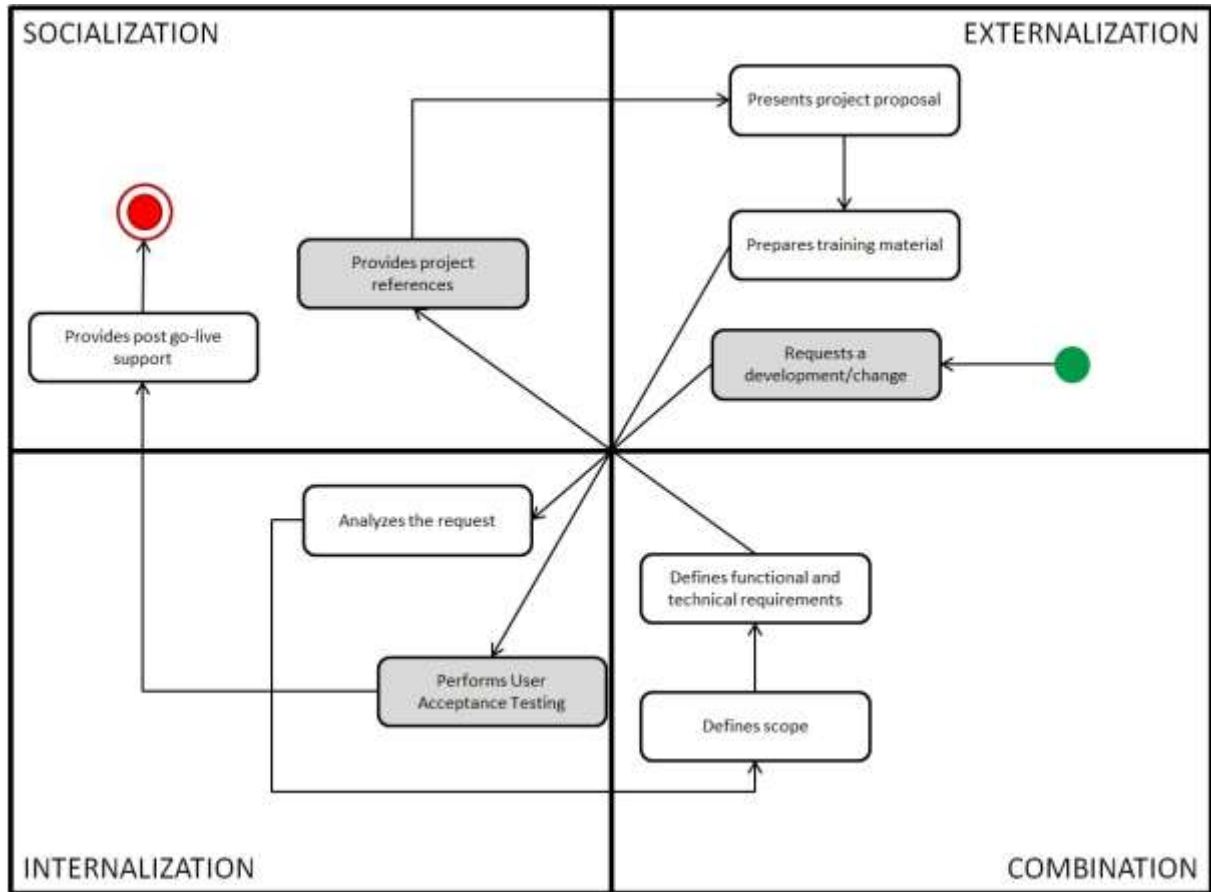


Figure 8 – Process of Development of a New Project: Knowledge Creation AS-IS

Considering that not all of the process' activities qualify as knowledge creation activities, the ones which are represented have been linked to show how, currently, a knowledge creation cycle unfolds when a project is launched within the Group. The activities shaded in grey are performed by the business users, whilst the others are performed by the project team.

According to a newly conceived mental model, derived from the execution of business activities, the business users request a development or an improvement to an existing tool, turning it into explicit knowledge by documenting it in the form of a ticket. The analysis of the request is a form of internalization, seeing as the project team has to interpret the written information and translate them into new concepts.

The team then defines the scope and functional/technical requirements according to the request which has been made, recording this information in written form. This is a form of combining the explicit knowledge that business users provide through the request with the newly created concepts.

The first form of socialization is when the business users provide project references that were missing in the first place, but which are necessary for the completion of a formal project

proposal. These references are not only bureaucracy-related, but also include further input on what business users have idealized in the request.

The presentation of a project proposal results from gathering the business users' input and documented concepts – their tacit thinking – into a formal proposal, represented in written form; a form of externalization.

The preparation of training material is of the project team's responsibility; it's the process of externalizing their personal knowledge into documents such as SUPs. Knowledge-wise, the performance of UAT is the mirrored process of the preparation of training material. It requires that, feeding on explicit knowledge, business users develop their technical skills.

The knowledge creation process ends with a second form of socialization; the support that the project team provides after the project goes live. Although the support can be of a technical nature, there are also cases when the training material isn't clear enough and the business users aren't capable to develop the mental models or technical skills that fulfil their needs, making them unable to perform the business activities they are supposed to.

4 Knowledge Management Framework TO-BE

The knowledge management processes cannot be dissociated from people, should they be managers, customers or employees, and any organizational process should be supported by solid knowledge creation and effective knowledge transfer. There isn't a one-way plan or a better way to do so, but there are scholars and researchers who focus on and suggest solutions that can adapt to almost any organizational environment.

It is because people are the most valuable resource for a company that this knowledge creation solution focuses upon the empowerment of workers, their professional standards and their fit into the organizational framework.

Having in mind the Five-Phase Model of the Organizational Knowledge-Creation Process, both improvement approaches concentrate on the neutralization of critical points – such as the redundancy of activities which could be condensed and others which are still missing – and on solutions that assess these critical points. The Five-Phase Model follows the same constructs developed within the theoretical approach, further incorporating the time dimension.

4.1 Integration of a New Joiner

Integrating a new joiner is a volatile process which will always depend on the diversification of professional profiles, learning capacity and openness to change. However, it is equally influenced by corporate mentality, environment and fieldwork.

Within the Accounting department, the integration of a newcomer aims to be a swift process where, between the first and third weeks after his arrival, the new joiner is fully operational. Given the complexity of the business activities in this department, the incorporation of a new resource requires a meticulous approach.

The process of integrating a new joiner essentially generates a knowledge transfer process. However, this is also the moment when a newcomer creates knowledge of his own, derived from the fact that he is assimilating new information and building up his own mental models. This is why this process has also been represented in light of the Five-Phase Model.

Below is the improved version of the process of Integration of a New Joiner, supported by the improvement proposal for its underlying knowledge transfer process.

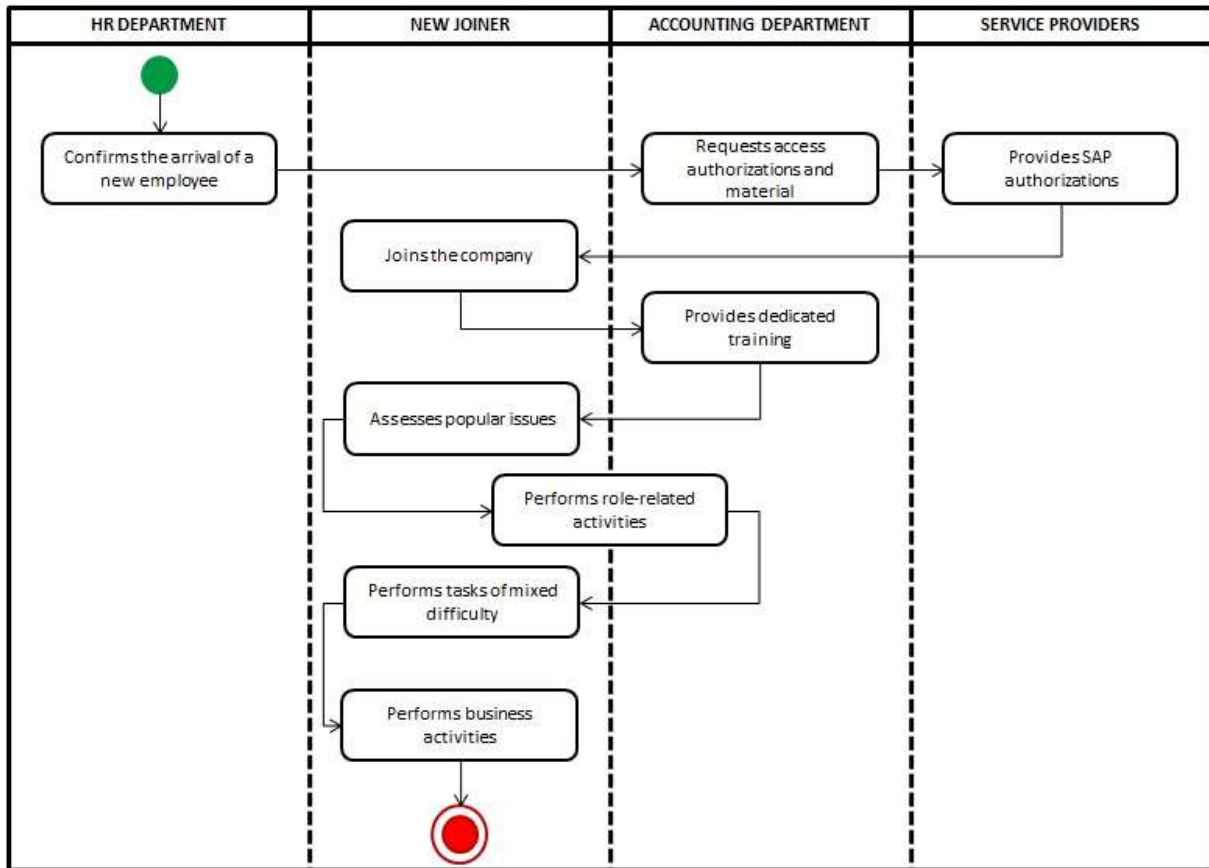


Figure 9 - Process of Integration of a New Joiner TO-BE

4.1.1 Knowledge Transfer Process

The new hires in the Accounting are requested a certain level of knowledge on the SAP platform and procedures. However, given the specificity of the business unit and the consequent internal adaptations and developments of this tool, every new joiner should receive general SAP training followed by a dedicated training on the use of the tool for the activities which the newcomer will perform in the future.

Ideally, this dedicated training would be merged with training on every aspect of the *mode opératoire* and internal accounting procedure relevant for the job. The segmentation of training causes segmentation in the learning process, which is why new joiners would benefit more from a personalized and conjoined preparation of both theoretical and practical training.

This will demand further planning in the backstage, but might also be an advantageous kick-off for the knowledge creation process, since there would be a “field” set for interaction between the training provider and the new joiner. This form of socialization would breakthrough to concept creation.

This second phase of knowledge creation would translate into a second part of training; the assessment of issues that are frequently brought up and that any employee in the business unit should be comfortable to resolve. By requiring dialogue and discussion, the newcomer would be questioning and rethinking what he had learnt, building on new concepts. The requisite variety of the intervening parts, more specifically the training provider’s experience, would be useful to provide a different perspective to the documented training material.

After concept creation, the new joiner would proceed to screening them, in order to achieve a balance regarding what he has learnt and what he will need to focus upon to perform business activities. The concept justification allows the newcomer to narrow the spectrum of concepts that he has assimilated according to the organization's intention at the time of hiring them. At this stage, a new joiner would be looking into solving issues and developing activities related to their role, under the supervision of another team member.

The fourth phase, following concept justification, would be the individual performance of tasks of mixed difficulty. This would involve constructing an archetype from the screened concepts – that is, performing an activity by combining the screened concepts with existing explicit knowledge, such as the *mode opératoire*. At this point, the new joiner would be assessing popular issues and performing role-related activities by himself.

The closing of the new joiner's integration is the performance of business activities which, knowledge-wise, is represented by the cross-leveling of knowledge. This means that, after constructing an archetype – a justified and modeled concept –, there is a shift to a new cycle of knowledge creation at a new level. The performance of business activities based upon the acquired archetype will shift the new joiner to the position of an employee and will propel another organizational knowledge creation process.

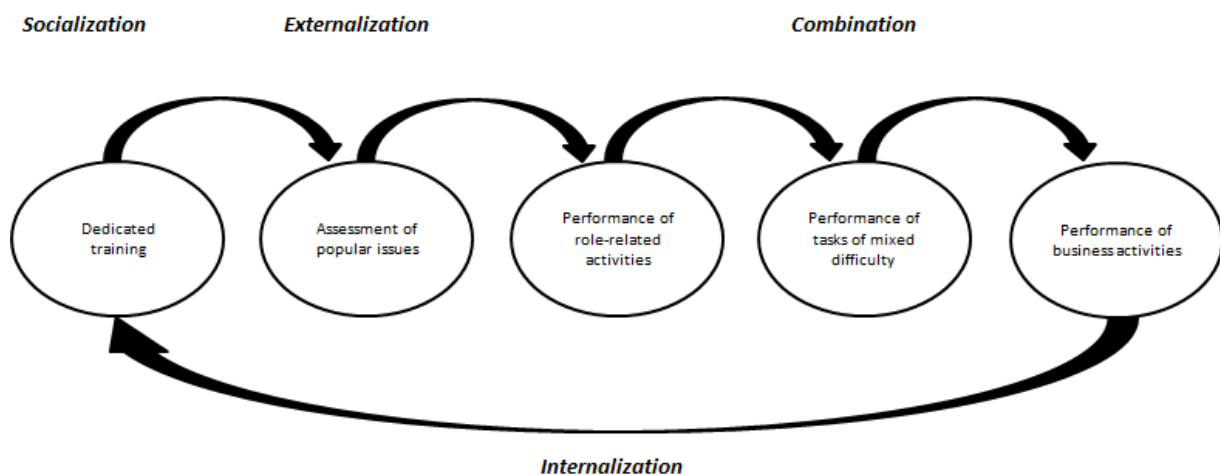


Figure 10 - Integration of a New Joiner: Knowledge Transfer Process TO-BE

4.2 Development of a New Project

The process of Development of a New Project is a structured process with imposed guidelines, meaning that, contrarily to the Integration of a New Joiner, it isn't highly volatile. However, it is also a point of knowledge creation. There is a great need for business users to process information and assimilate it for posterior application in the short-term, something that will only be achievable if the ideal conditions have been met.

Below is the improved version of the process of Development of a New Project, supported by the improvement proposal for its underlying knowledge creation process.

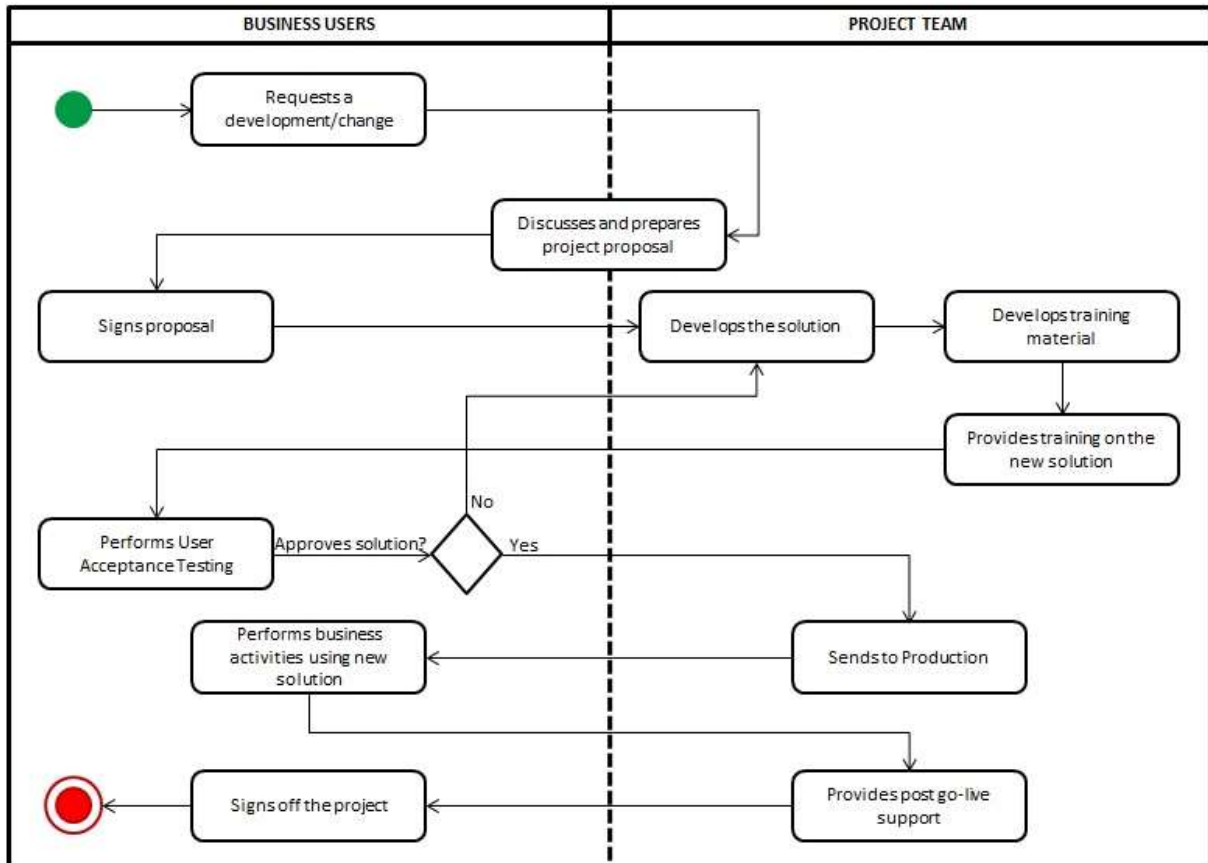


Figure 11 - Process of Development of a New Project TO-BE

4.2.1 Knowledge Creation Process

In this case, the process' trigger event is the fifth phase of another knowledge creation process. When the business users have thoroughly discussed their mental models, created concepts and justified them, they materialize them into an archetype. This is a clear example of cross-leveling of knowledge. At this point, the business users have identified a need and idealized the solution that will meet their need and request a development or change.

Instead of having the service providers analyze the request and define the scope and the functional and technical requirements for the solution, there should be space for sharing tacit knowledge.

The existence of a space for discussion will allow the business users to share their mental model with the service providers, but the latter will also be able to share their technical input

and validate the business' ideas or justify their misfit. Although in the first instance this might seem a time-consuming activity, it will save up a whole lot more time in the long-term, avoiding the need for the approval of a proposal and of every activity before that.

The discussion of the proposal covers the first three phases of the Five-Phase Model of the organizational knowledge creation process. At the end of phase three, the proposal should be signed and the service providers will move on to building the archetype; the development of a new solution that meets every imposed requirement.

The development of training material is the point of cross-leveling of knowledge, representing a new, justified and modeled concept (the solution) which will kick-off a second knowledge creation process. This approach demonstrates the complexity of developing a new project and divides and reorganizes the activities in a coherent and orderly manner.

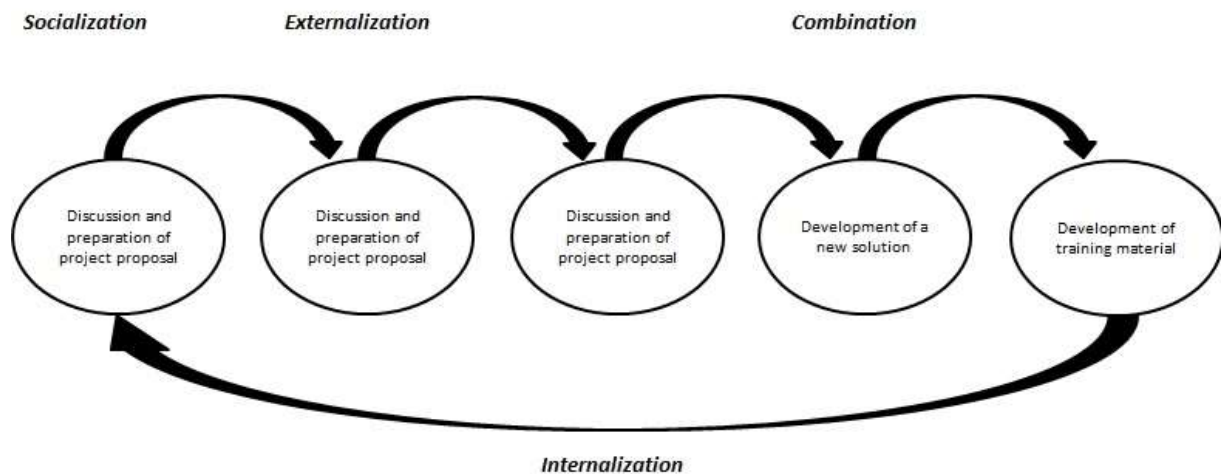


Figure 12 - Development of a New Project: Knowledge Creation Process TO-BE, Part I

The training material shouldn't simply be provided to the business users. Rather than that, training sessions should be scheduled and included as a prerequisite of the project proposal. This is the only way to ensure a smooth knowledge creation spiral. A training session – to train business users on the new solution – would be the place for the first phase of a new creation process, allowing the creation and discussion of concepts, screening them for the posterior phase.

The combination of the documented training material and the newly acquired concepts from the training session would result in the performance of the UAT, symbolizing the construction of an archetype. The cross-leveling of this modeled explicit knowledge would translate into the performance of activities on the newly developed solution.

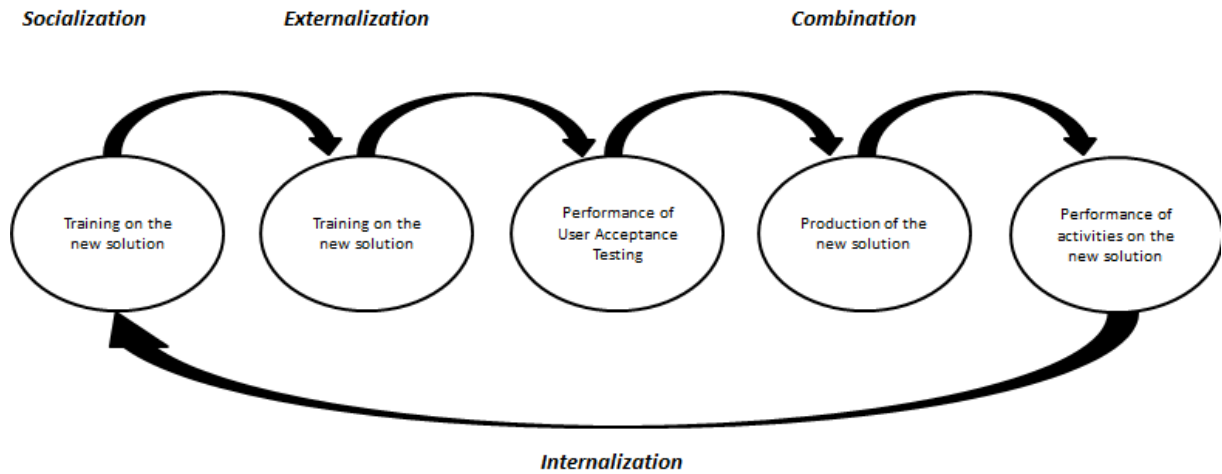


Figure 13 - Development of a New Project: Knowledge Creation Process TO-BE, Part II

The cross leveling ends another knowledge creation cycle and promotes the post go-live support, an activity which should gather the conditions for a field of discussion, if necessary, although the need for this kind of support should decrease if the whole knowledge creation process would suffer the suggested improvements.

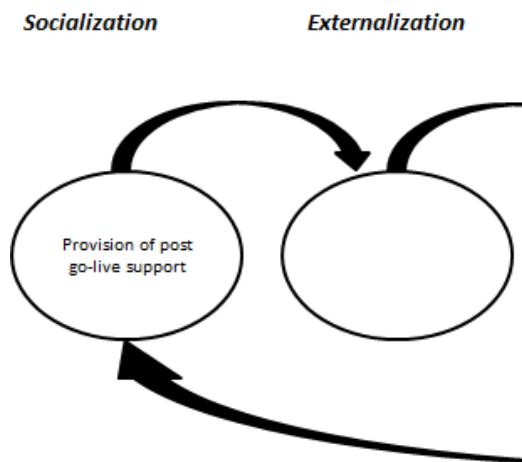


Figure 14 - Development of a New Project: Knowledge Creation Process TO-BE, Part III

5 Conclusions and Evolution Perspectives

The extent to which knowledge creation influences organizational success is no longer questionable. More and more, companies consider knowledge a resource which they know can bring competitive advantage if created within the proper corporate environment, shared through the right channels and managed by the appropriate people.

This project's improvement proposal focuses upon the immediate actions that can be taken for smoother knowledge management processes underlying two relevant organizational processes with distinct goals. Firstly, this workpiece overviews how the company deals with both organizational processes at the present and then acts on improving knowledge management procedures, explaining how the organization can benefit from this and the influence that these procedures have on the organizational processes.

However, this could just be the start of further and deeper improvements which, according to other companies and authors, have proven to be successful. As an immediate evolution perspective, the RTL Group would greatly benefit from having appointed professionals for specific knowledge-related responsibilities. When integrating a new joiner, who is intended to become a value-added resource in the company, the team should have prepared a full integration program, appointing someone who would be in charge of the whole process. This person should, therefore, have a solid background in the business unit and good communication skills.

My personal experience as a newcomer has emphasized the need for a structured integration. The lack of a predefined integration program had a considerable influence on the performance of posterior activities. The department wasn't fully prepared for the reception of an outsider, let alone a trainee who would only be there for a fixed period of time.

The very few training sessions I had were out of context, considering that this was my first experience contacting with SAP and with a financial environment. Furthermore, the fact that the department didn't have a specific project to assign me to made me lose the common thread to the given tasks. Overall, the adjustment was tough and I expected a lot more guidance during my stay. This enhances the need for tutoring and supervision, avoiding that the new joiners disperse from their role and activities.

Regarding the development of a new project, to make the knowledge transfer less time-consuming and more effective, the business units should appoint a small group of 2 or 3 experienced professionals to receive training from the service providers. They would then report back to the rest of the business users, generating more knowledge creation processes. Furthermore, they would also be – from then on – the reference entities in case of any doubts, decreasing the need to resort to the first-level support.

Overall, this project intends to be the kick-off to greater knowledge management developments, stressing the fact that keeping up with technological evolution isn't enough; companies must look closely at the knowledge that lies within it and how to better manage it for a positive outcome.

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ANEXO A: FTS Specialist Interview Script

1. How does a staff member provide support?
2. What kind of documents do they provide users?
3. Are there different people in the team to deal with different kinds of support requests?
4. What happens when a problem for which there still isn't a support solution arises?
5. After addressing the issue, how is the new support material managed?
6. Since the development of a new project is, by all means, something new, what kind of information/documentation results from it?
7. Who is responsible for the creation of training material and how is it done?
8. Considering that a team is coming back to a previously developed project, what are the outcomes of it? Is the training material updated and made available?

ANEXO B: Business Interview Script

1. When there is a new joiner in your business unit, how do you proceed? What are the steps followed from the moment someone joins until the moment when they are able to perform their tasks independently?
2. Overall, how long does the new joiner integration last?
3. What kind of information/documentation do you consider essential to provide to a new joiner? Is there a “new joiner collection” of documents or is training material provided regarding the area where the new joiner will be working in the future?
4. Who is involved in a new joiner’s training and how? To what extent is a key user involved?
5. After training, is a new joiner able to perform business activities independently?
6. If a new joiner/user needs support, how can/does he get it? Who - or what - does he resort to?
7. What happens after a support request is attended to? Are issue resolutions stored and made available for future reference?
8. When there is a new project, how is the team prepared and trained? Describe the process from the moment a new project is announced until the moment the whole team is up-to-date and operational.
9. What documentation is involved in this process? Who provides it and to whom?
10. How is training documentation handled after the training is over? To what extent do users have access to the training material?
11. Where is it stored and who is it managed by?